

Amendments to the Specification

Please replace page 67, lines 3-20, with the following:

“The GlnBP sensor was tested in a lymphoblast culture. The glutamine concentration profiles during the 100-mL cell culture are shown in Fig. 22a. The gradual increase in glutamine concentration in the sterile medium in the absence of cells was caused by the gradual release of glutamine from GlutaMAX™, a dipeptide conjugate (L-alanyl-L-glutamine) used as the L-glutamine source in a stabilized form (URL: <http://www.invitrogen.com>, which is incorporated by reference herein). The dissociation of the GlutaMAX™ dipeptide is accelerated by aminopeptidases within the cell. At the early stage of the cell culture, the concentration of the dipeptide was high. The dissociation rate of the dipeptide was greater than the utilization rate of the glutamine released. As a result, some of the glutamine molecules diffused out of the cells and accumulate in the medium (BRAND et al., Metabolism, 38(8), suppl 1:29-33 (1989), which is incorporated by reference herein). While not wishing to be bound by theory, it is believed that this is the reason why the glutamine concentration increased more rapidly when cells were present.

As in the determination of glucose, analysis of glutamine by the GlnBP sensor was compared to the YSI Chemistry Analyzer. Determination of glutamine using YSI is a complicated process. The YSI glutamine biosensor is a glutaminase and glutamate oxidase dual enzyme sensor (URL: <http://www.ysi.com>, which is incorporated by reference herein).”